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PAT/US98/05551

## CLAIMS

We claim:

1. A process for the preparation of corn fiber gum comprising:
  - a) mixing corn fiber with an alkaline solution to form a slurry and
  - 5 extract hemicellulose;
  - b) treating the slurry with hydrogen peroxide at a pH of about 10.0 to 12.5; and
  - c) separating out the insoluble fractions from the corn fiber slurry to yield corn fiber gum in solution.
- 10 2. The process of claim 1, wherein steps (a) and (b) are conducted simultaneously.
3. The process of claim 1, wherein the corn fiber is destarched.
4. The process of claim 3, wherein the corn fiber is destarched by  $\alpha$ -amylase.
- 15 5. The process of claim 1, wherein step (b) is carried out at a pH of about 11.2 to 11.8.
6. The process of claim 1, wherein the alkaline solution of step (a) is selected from at least one of sodium hydroxide, potassium hydroxide, calcium hydroxide, and magnesium hydroxide.
- 20 7. The process of claim 1, wherein the hydrogen peroxide is added in an amount of from about 5 to 20%.
8. The process of claim 1, further comprising precipitating the hemicellulose A by acidifying the slurry such that the hemicellulose A precipitates out and the corn fiber gum remains in solution, and separating out
- 25 the hemicellulose A precipitate.

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9. The process of claim 8, wherein the acidification is to a pH of about 3.5 to 6.0.
10. The process of claim 9, wherein the acidification is carried out between steps (b) and (c).
- 5 11. The process of claim 8, wherein the acidification is accomplished by the addition of sulfuric acid.
12. The process of claim 1, wherein step (c) is accomplished by at least one separation technique selected from the group consisting of filtration and centrifugation.
- 10 13. The process of claim 12, wherein the separation technique is horizontal decanted and high speed disk centrifugation.
14. The process of claim 1, further comprising a second alkaline hydrogen peroxide treatment after separation of the insoluble fractions.
- 15 15. The process of claim 14, further comprising a second separation step after the second alkaline hydrogen peroxide treatment.
16. The process of claim 1, further comprising isolating the corn fiber gum from solution.
17. The process of claim 16, wherein the isolation is accomplished by at least one technique selected from the group consisting of drum drying, freeze drying, spray drying, and alcohol extraction.
- 20 18. The process of claim 1, wherein the yield of corn fiber gum is from about 25 to 50% (wt/wt) based upon the destarched corn fiber.
19. The process of claim 18, wherein the yield of corn fiber gum is from about 35 to 50% (wt/wt) based upon the destarched corn fiber.

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20. A process for the preparation of corn fiber gum comprising:
- a) destarching corn fiber;
  - b) treating corn fiber in an alkaline solution of hydrogen peroxide at a pH of about 10.0 to 12.5 to form a slurry and extract hemicellulose;
  - 5 c) acidifying the slurry such that the hemicellulose A precipitates out and the corn fiber gum remains in solution;
  - d) separating out the insoluble fractions from the corn fiber slurry to yield corn fiber gum; and
  - e) isolating the corn fiber gum from solution.
- 10 21. A process for the preparation of corn fiber gum comprising:
- a) destarching corn fiber;
  - b) mixing corn fiber with an alkaline solution to form a slurry and extract hemicellulose;
  - 15 c) separating out the insoluble fractions from the corn fiber slurry to yield corn fiber gum;
  - d) treating the slurry with hydrogen peroxide at a pH of about 10.0 to 12.5;
  - e) acidifying the slurry such that the hemicellulose A precipitates out and the corn fiber gum remains in solution;
  - 20 f) separating out the hemicellulose A precipitate; and
  - g) isolating the corn fiber gum from solution.
22. The corn fiber gum produced by the process of claim 1.
23. The corn fiber gum produced by the process of claim 10.
24. The corn fiber gum produced by the process of claim 20.